

SUMMARY OF A SURVEY OF BIRD-LIFE AT BILBARIN, W.A.

By E. H. SEDGWICK, Caron.

Shortly after my arrival at Bilbarin, near Corrigin, W.A. in January, 1946, I planned a survey on a quantitative basis of the bird-life of the area immediately adjacent to the townsite and spent what little time I had for observing in an attempt to carry out the scheme. As it happened, I left the district in January, 1947, while my survey was still far from complete. However, I will summarise the results of my observations though I do not regard these as being conclusive by any means.

The environs of Bilbarin are typical of dozens of small wheat belt settlements and may be sub-divided broadly into: (a) open forest; (b) heathland; (c) roads bordered by native vegetation and (d) cultivation.

THE OPEN FOREST.

The forest consists mainly of Wandoo (*Eucalyptus redunca* var. *elata*) and Gimlet (*Euc. salubris*), with patches of *Acacia*, Mallee (*Eucalyptus* spp.), Quandong (*Santalum acuminatum*) and at a lower level, shrubs such as *Verticordia* and *Grevillea*.

Investigation of the forest was made on a similar plan to that used by Dr. D. L. Serventy in King's Park (*Emu*, vol 37, 1938, p. 269), and by myself on the Peel Estate (*Emu*, vol. 40, 1940, p. 129), a scheme designed to show the relative frequency with which species are encountered, but which, if carried out with sufficient intensity, gives also a fair index to the relative frequency of individuals. This plan, in brief, is to note all species identified in the course of each of a number of traverses of a selected area. The number of occasions upon which the species has been encountered is then expressed as a percentage of the number of traverses made, namely, the possible number of occasions upon which the species could have been encountered.

In this case, forty traverses each of five hundred yards, were made over two different routes, the routes being used alternately.

The names of birds employed are those adopted by the Royal Australasian Ornithologists' Union in "The Official Checklist of the Birds of Australia" 1926, and supplements, and the scientific names of these birds may be determined by reference to that publication.

Relative Frequency of Forest Birds		Pcr cent
No.	Species.	Frequency
1.	Red-tipped Pardalote	92.5
2.	Brown Weebill	90
3.	Red-capped Robin	72.5
4.	Chestnut-tailed Thornbill	60
5.	Singing Honeycater	"

6.	Horsfield Bronze Cuckoo (13)	54.2
7.	Tree Martin	52.5
8.	Brown-headed Honeyeater	"
9.	Yellow-tailed Thornbill	47.5
10.	Western Shrike-thrush	45
11.	Brown Flycatcher	"
12.	Brown Honeyeater	"
13.	Pallid Cuckoo (12)	44.4
14.	Pt. Lincoln Parrot	37.5
15.	Regent Parrot (Smoker)	35
16.	Rufous Whistler	32.5
17.	Elegant Parrot	27.5
18.	Black-faced Wood-swallow	"
19.	Southern Scrub-robin	"
20.	Rainbow-bird (15)	26.7
21.	White-winged Triller	25
22.	Brown Thornbill	20
23.	Western Warbler	"
24.	Western Magpie	"
25.	Nankeen Kestrel	15
26.	Black-faced Cuckoo-shrike	"
27.	Grey Fantail	"
28.	Red Wattle-bird	12.5
29.	Black and White Fantail	"
30.	White-eared Honeyeater	10
31.	White-fronted Chat	"
32.	Black-capped Sittella	"
33.	White-browed Babbler	"
34.	Grey Butcher-bird	7.5
35.	Brown Hawk	"
36.	Masked Wood-swallow	"
37.	White-faced Heron*	5
38.	Mulga Parrot	"
39.	Raven	"
40.	Fantail Cuckoo	"
41.	Banded Plover*	"
42.	Aust. Goshawk	"
43.	Restless Flycatcher	"
44.	Western Rosella	"
45.	Magpie-Lark	"
46.	Shy Ground-wren	2.5
47.	Zebra Finch	"
48.	Grey Teal	"
49.	White-tailed Black Cockatoo	"
50.	Galah	"
51.	Fairy Martin	"
52.	Rufous Song-lark	"
53.	Purple-crowned Lorrikeet	"
54.	Aust. Pipit	"
55.	Common Bronzewing	"
56.	Grey Currawong (Squeaker)	"

57. Tawny-crowned Honeyeater	Less than	2.5
58. Western Yellow Robin	" "	"
59. Yellow-plumed Honeyeater	" "	"
60. Golden Bronze Cuckoo	" "	"

*Observed in passage only.

The Grey Teal was noted at a time when a portion of the forest was inundated after heavy rain. The Australian Pipit had, no doubt, strayed into the forest from adjacent stubble.

In the case of migrants, the actual number of records is shown in brackets and the percentage figure calculated on the number of traverses made while the species was known to be in the district. There is a strong argument in favour of treating the Red Wattle-bird as a winter visitor to the Bilbarin district. However, the number of Wattle-birds present at any time was small, making it impossible to determine accurately how long the species was represented, so that the Red Wattle-bird is here treated as a resident species.

Birds with a frequency of less than 2.5 were recorded in the study area, but not during the course of the investigation.

The highest number of species seen was 21 on August 18, and the lowest three on February 10, March 3 and March 10. The average number of species seen was 12.1. The average number for the December-May period was 8.4 and for the June-November period, 15.4.

HEATHLAND.

The vegetation of the heathland (locally known as "scrub plain" or "sand plain") consists mainly of shrubs from one to five feet in height with occasional Mallees (*Eucalyptus spp.*) and Sheoaks (*Casuarina sp.*) up to the height of ten feet. The smaller trees and shrubs include *Acacia spp.*, *Hakea spp.*, *Banksia*, *Verticordia spp.*, *Grevillea*, *Hibbertia*, stunted *Xanthorrhoea*, *Santalum*, at least one species of the *Epaeriduaceae* and the climbing parasite *Cassytha*. Characteristic herbs are *Caladenia spp.*, *Stylidium spp.* and *Drosera spp.*

The investigation followed similar lines to the preceding one, but in this case only thirty-four traverses were made and these as nearly as possible, over the same route on each occasion.

No.	Relative Frequency of Heathland Birds		Per cent.
	Species.	Frequency.	
1.	Singing Honeyeater	82	
2.	Southern Scrub-robin	73	
3.	Tawny-crowned Honeyeater*	62	
4.	White-fronted Chut	59	
5.	Blue and White Wren	53	
6.	Brown Thornbill	50	
7.	Rock Field-wren	44	
8.	Chestnut-tailed Thornbill	35	
9.	Black-faced Wood-swallow	30	
10.	Brown Honeyeater	"	

11. Elegant Parrot	30
12. Tree Martin	"
13. Shy Heath-wren	27
14. Regent Parrot†	"
15. White-eared Honeyeater	"
16. Common Bronzewing	21
17. Australian Pipit	18
18. Raven†	"
19. Brown Weebill	15
20. Red-tipped Pardalote	"
21. Black-faced Cuckoo-shrike	"
22. Brown-headed Honeyeater	"
23. Western Magpie	"
24. Mulga Parrot	12
25. Horsfield Bronze Cuckoo (13)	11
26. Black-White Fantail	9
27. Welcome Swallow	"
28. Red Wattle-bird	"
29. Western Shrike-thrush	"
30. Pt. Lincoln Parrot	"
31. Banded Plover	"
32. Red-capped Robin	6
33. White-browed Babbler	"
34. Spiny-cheeked Honeyeater	"
35. White-faced Honeyeater	3
36. Brown Hawk†	"
37. Dusky Miner	"
38. White-tailed Black Cockatoo	"
39. Crested Bell-bird	"
40. Quail (<i>sp.</i>)	"

*Not recorded in February or March, i.e., not until April.

†Observed mainly in passage.

The highest number of species seen was 18 on June 30, and the lowest, one on February 10. The average number of species recorded was 8.9. The average for the December-May period was 7.3 and for the June-November period, 10.1.

The Blue and White Wren was perhaps less frequent than is indicated above. There were, I believe, only one or two small parties in the vicinity, but their territory lay across the line of traverse so that, although seerctive, they were frequently encountered.

CULTIVATION.

The area selected was a stubble paddock of approximately one hundred acres last cropped two years prior to the commencement of the investigations. Being unfenced, the paddock had not been systematically grazed. Twenty traverses only were made during the February-August period, but in view of the open nature of the terrain an actual census of individual birds was attempted.

The following table indicates the average number of individuals seen and also the number of times each species was seen expressed as a percentage of the number of counts made in order to provide a figure for comparison with the figures in the preceding tables.

As before, the distance traversed was 500 yards and the area included in the count would be roughly 20 acres. Accepting this figure, the data below give a density of 0.125 birds to the acre.

No.	Species.	Average	
		Number Seen.	Frequency per cent.
1.	Australian Pipit	0.7	45
2.	Banded Plover	0.6	25
3.	Tree Martin	0.45	10
4.	White-fronted Chat	0.4	15
5.	Yellow-tailed Thornbill	0.1	5
6.	Nankeen Kestrel	0.05	5
7.	Mulga Parrot	0.05	5
8.	Brown Hawk	0.05	5
9.	Elegant Parrot	0.05	5

The Tree Martins were observed at a time when a portion of the area was flooded by heavy rains.

The average number of individuals of all species recorded was 2.5, while the highest number of individuals seen was 8 on August 14, and the lowest, nil on eight occasions during the February-May period. The average number of individuals seen during the December-May period was 0.9, and during the June-November period, 3.5. The average number of species seen was 1.3, while the highest number seen was 5 on August 14 and the lowest, nil on eight occasions during the February-May period.

The area examined was not in itself typical of wheatbelt cultivated areas. The relatively small area selected was bordered on one side by forest and on the other by heathland and in any case was not under a systematic rotation.

A thorough survey of the bird-life of a wheatbelt cultivated area would call for the examination of a larger area in less close proximity to areas under natural vegetation and this in turn would need to provide areas at different stages of cultivation, i.e., crop, stubble, and bare fallow.

THE ROADSIDE.

The 500 yards of road selected for study purposes was typical of hundreds of miles of wheatbelt thoroughfare. The roadside vegetation was a remnant of Mallee (*Eucalyptus spp.*) with a few large trees (*Euc. redunca*) towards one end. As with the cultivation, an individual count was made, the area being traversed twenty times during the February-June period. Only birds seen between the road boundaries were counted so that the area covered would be approximately 2.5 acres, giving a density of 4 birds to the acre.

No.	Species.	Average Number Seen.	Frequency per cent.
1.	Singing Honeyeater	1.8	50
2.	Yellow-tailed Thornbill	1.55	50
3.	Red-capped Robin	0.85	50
4.	Brown-headed Honeyeater	0.65	5
5.	Brown Weebill	0.65	20
6.	Chestnut-tailed Thornbill	0.55	15
7.	Port Lincoln Parrot	0.55	20
8.	Brown Honeyeater	0.35	20
9.	Common Bronzewing	0.3	20
10.	Raven	0.25	10*
11.	Banded Plover	0.25	10*
12.	Western Magpie	0.2	10
13.	White-fronted Chat	0.2	5
14.	Western Rosella	0.2	10
15.	Red-tipped Pardalote	0.2	15
16.	Black and White Fantail	0.2	10
17.	Welcome Swallow	0.15	5
18.	Australian Pipit	0.15	15
19.	White-winged Triller	0.1	10
20.	White-browed Babbler	0.1	10
21.	White-eared Honeyeater	0.1	10
22.	Black-faced Wood Swallow	0.05	5
23.	Mulga Parrot	—	—
24.	Dusky Miner	—	—
26.	Unidentified5	—

*Observed in passage.

The average number of birds seen was 10, the highest number 31 on April 28, and the lowest, nil (on six occasions). The average number of birds for the December-May period was 8, and for the June-November period, 18. The average number of species seen was 3.7, the highest number 9, and the lowest, nil. The last three species listed were noted within the prescribed area, but not in the course of a census traverse.

The evidence suggests that few if any of the birds noted were resident in the study area. Quite a number of the birds seen appeared to be using the road as a highway, or bridge, between the forest at one end and the heathland at the other.

A GULLY.

In planning the foregoing survey the possibilities of a gully which passed through the townsite and adjacent farmlands were overlooked. The winter proved unusually wet, so that the gully ran continuously from June to September and not, as in normal years, only occasionally after heavy rain. In this gully were recorded:

Chestnut-breasted Shelduck.
Black Duck.
Grey Teal.
Black-tailed Native Hen (once).
Hoary-headed Grebe (once).

Grey Teal bred in the vicinity.

OTHER SPECIES.

Other species of birds recorded at or near Bilbarin, but not included in any of the foregoing lists, are:

Owlet-nightjar (once).
White-headed Stilt (once, in passage).
Southern Stone Curlew.
Black Swan (in passage).
Wedge-tailed Eagle (once).
Boobook Owl.
Yellow-plumed Honeyeater (once).
Typo sp. (once).
Brown Songlark (once).
Pied Butcher-bird (once).

CONCLUSION.

All the tables given above suggest a denser and more varied bird population in winter than in summer and give rise to speculation as to what movement takes place to produce this result. An uncomplicated coastwise movement might be suspected but D. L. Serventy (*Emu*, vol. 37, 1938, p. 269) found a similar decline in summer population in King's Park, Perth. The hypothetical movement may be southward, but this is pure speculation. Actually, I am inclined to think that relatively unfavourable observing conditions connected with the seasonal inactivity of the birds contribute to the lower summer totals and that the difference is more apparent than real. Nevertheless, a significant difference does appear to exist and requires explanation.

The investigation would have to be extended considerably to enable accurate conclusions to be drawn. At the same time it is felt that the figures presented give a clearer picture of the bird population than could have been obtained by more subjective methods of birdwatching.

GRASS AND BIRDS

By C. B. PALMER, Bassendean

The number of seed-eating birds found in the southern part of Western Australia is small compared with that found in Britain or Western Europe, the reason being that the native vegetation is largely scrub and there is a paucity of species of grasses bearing edible seeds. In the northern part of the State the position is different, for there are vast grassy plains and open savannah, and the population of granivorous birds is large, both in number of